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10/779,610

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Shigeyasu Morihiro

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EXAMINER

METZMAIER, DANIEL S

ART UNIT

PAPER NUMBER

1712

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

10/779,610

**Applicant(s)**

MORIHIRO ET AL.

**Examiner**

Daniel S. Metzmaier

**Art Unit**

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3,4 and 7-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 7-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/13/2006.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Claims 1, 3-4, and 7-11 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 13 December 2006; 28 February 2007; and 19 April 2007 has been entered.

Applicants remarks filed 19 April 2007 appear to supercede those remarks filed 28 February 2007.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 is indefinite since the loss factor varies with temperature and the claim does not set forth the temperature said loss factor is defined.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 4 and 7-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Elotex AG, WO 00/05275. Elotex AG (abstract) discloses aqueous dispersions of re-dispersible polymer powders. Elotex AG (page 9, lines 19 et seq; particularly page 10, lines 1 et seq) discloses the dispersible powders having T<sub>g</sub> of -70°C to 110°C. Elotex AG (page 10, lines 28 et seq) discloses dispersions of particles having an inner phase T<sub>g</sub> < 50°C and an outer phase T<sub>g</sub> of > 50°C as a core/shell particle prepared by emulsion polymerization. Elotex AG

(page 10, lines 1 et seq) discloses the Tg values of the particles may be modified, so as to permit adaptation to the intended use.

The dispersions and emulsion are deemed to be synonymous and applicants have not shown distinction. Applicants' claims set forth an emulsion but also set forth that particles, which do not melt or decompose during thermal drying.

The Tg of the emulsion would be inherently  $< 50^{\circ}\text{C}$  based on the further ingredients in the emulsion compositions. Elotex AG (page 9, lines 9-17) disclose said dispersible particles have a particle size of 20 to 1000 nm, preferably 50 to 600, which are less than 15 microns as claimed (1 micron = 1000 nm).

Elotex AG (page 15, lines 30 et seq) discloses the use of the re-dispersible powders in numerous systems including mortars and primers among others.

To the extent the Elotex AG differs from the claims in the explicit disclosure of the physical properties, explicit Tg of the emulsion, gel fraction, loss factor; Elotex AG (page 10, lines 1 et seq, particularly lines 1-2) discloses the modification of the Tg for an intended use is within the skill level of one having ordinary skill in the art by choice of the quantity of monomers used and the weight proportions of comonomers.

It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to modify the inner and outer Tg for the intended use of the mortar or primer compositions as disclosed in the Elotex AG reference. Attention is further directed to MPEP 2112(III).

8. Claims 1, 3-4 and 7-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Mestach, US 6,444,749.

Mestach (abstract, examples and claims) discloses aqueous dispersions of polymer particles, wherein the Tg of the particle at the center of the particle is different from the Tg of the particle at the surface.

The dispersions and emulsion are deemed to be synonymous and applicants have not shown distinction. Applicants' claims set forth an emulsion but also set forth that particles, which do not melt or decompose during thermal drying.

The (column 2, lines 61-65) Tg difference is characterized as at least 55°C, preferably 75°C, and the higher of the Tg is at least 40°C, preferably at least 50°C.

Mestach (column 5, lines 6 et seq) discloses coating compositions. Mestach (examples 1 and 2) discloses the use of polymer reactive surfactants. Mestach (column 6, line 43) discloses the formation of a particle size of 87 nm, which is less than 15 microns, and a solids content of 42 mass %. Mestach (column 4, lines 1-44, particularly lines 5, 25 and 30) discloses the use of methacrylic acid and cross-linking of the polymer.

The Tg of the emulsion, the fraction and the loss factor would have been inherent to the compositions, which are otherwise the same. Attention is further directed to MPEP 2112(III).

To the extent the Mestach differs from the claims in the explicit disclosure of the physical properties, explicit Tg of the emulsion, gel fraction, loss factor; Mestach discloses a range of the Tg, which would have been within the skill level of one having ordinary skill in the art by choice of the quantity of monomers used and the weight proportions of comonomers.

It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to modify the inner and outer Tg for the intended use of the mortar or primer compositions as disclosed in the Mestach reference.

9. Claims 1, 3-4, and 7-11 are rejected under 35 U.S.C. 103(a) as obvious over Mestach, US 6,444,749, in view of Castner, US PG PUB 2004/0198917 A1, and Polymer Blends Handbook V. 1, pages 427-447. Mestach (abstract, examples and claims) discloses aqueous dispersions of polymer particles, wherein the Tg of the particle at the center of the particle is different from the Tg of the particle at the surface.

To the extent Mestach differs from claim 8 and the loss factor, Castner (paragraph [0006]) discloses "... that when polymers of sufficiently different solubility parameters are compounded together the degree of immiscibility leads to an increase in the tangent delta at the Tg ...".

To the extent Mestach differs from the claims and the compositional properties, Polymer Blends Handbook V. 1, pages 427-447, characterizes the properties and their effect on the resulting compositions, such as cross-linking density and solubility of the polymers (page 432 et seq); variation (page 435 et seq) of the Tg, cross-linking density, chemical structure for the two polymer networks, to modify the damping behavior, miscibility, microheterogeneous morphology for broad temperature range damping; and variation of the gel fraction (page 436 et seq) for the damping and hardness effect.

These references are combinable because they teach cross-linked particles, compositions employing said materials, and the relationship of the properties and parameters of the materials. It would have been obvious to one of ordinary skilled in the

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art at the time of applicants' invention to vary the solubility of the particles by cross-linking and thus affect the loss delta (loss factor) of the Mestach compositions as taught in the Castner reference. It would have been obvious to one of ordinary skilled in the art at the time of applicants' invention to vary the solubility of the particles, cross-linking, Tg of the polymers in the networks, gel fraction and loss factor as routine parameters in coatings for the desired effect as taught in Polymer Blends Handbook V. 1, pages 427-447.

### ***Response to Arguments***

10. Applicant's arguments with respect to claims 1, 3-4, and 7-11 have been considered but are moot in view of the new ground(s) of rejection.


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel S. Metzmaier  
Primary Examiner  
Art Unit 1712

DSM